I/We Claim:

1. A single-piece electrical contact element having a substantially cylindrical contact tube for resiliently receiving a substantially cylindrical contact pin, the contact tube comprising:

a contact tube main part, which extends over at least a substantial part of the contact tube length and over a first circumferential sub-region of the contact tube circumference, and

at least one radially resilient spring arm, connected to one circumferential end of the contact tube main part and extending over a second circumferential sub-region of the contact tube circumference,

wherein the spring arm projects radially outwardly in a first circumferential region adjacent to the contact tube main part and has a cylindrical free-standing circumferential end region, whereby the contact pin inserted into the contact tube only contacts the contact tube 15 at a first contact touch zone at the contact tube main part and at a second contact touch zone at the free-standing end region of the spring arm.

2. The contact element according to claim 1, in which the second circumferential sub-region of the contact tube is substantially larger than the first circumferential sub-region thereof.

3. The contact element according to claim 1, wherein the spring arm has an approximately spiral cross-sectional shape, wherein a spiral start adjacent to the contact tube main part is at a greater radial distance from the contact tube longitudinal axis than a free-standing spiral end and the center of curvature of the spiral start is offset radially outwards relative to the longitudinal axis of the contact tube.

4. The contact element according to claim 1, wherein the region of the spring arm provided for the resilient second contact touch zone is at a circumferential distance from the contact tube main part corresponding to approximately 2/3 of the contact tube circumference.

5. The contact element according to claim 1, wherein at least two radially resilient spring arms are offset from one another in the axial direction of the contact tube and movable independently of one another, the spring arms being connected to opposite circumferential ends of the

contact tube main part and extending in opposite circumferential directions over second circumferential sub-regions of the contact tube circumference, each spring arm projecting radially outwardly in a first circumferential region adjacent to the contact tube main part and having a cylindrical free-standing circumferential end region, whereby a contact pin inserted into the contact tube contacts the contact tube at three contact touch zones, a first contact touch zone in the region of the contact tube main part and at least two resilient further contact touch zones in the free-standing end regions of the at least two spring arms.

6. The contact element according to claim 1, wherein at least one of the contact touch zones forms, in the circumferential direction of the contact tube, one or more point-contacts or line contacts.

7. The contact element according to one of claim 1, further comprising a connecting arm integrally connected to the contact tube, which connecting arm is connected to an end region of the contact tube main part remote from the mating end of the contact tube and is configured to enable a resilient axial movement of the contact tube.

8. The contact element according to claim 7, wherein the connecting arm comprises a resilient region adjacent to the contact tube main part and a rigid region adjoining the resilient region and being more rigid than the resilient region.

9. The contact element according to claim 8, wherein the connecting arm is formed by a metal strip, the resilient region of which is formed by a single-layer portion of the metal strip and the rigid region of which is formed by a two-layer portion of the metal strip.

10. The contact element according to claim 9, wherein the rigid region is formed by folding the metal strip back onto itself at an end of the metal strip remote from the resilient region.

11. The contact element according to claim 8, wherein the rigid region, at an end region thereof remote from the resilient region, is configured as a contact for connecting the contact tube to an electric wire.

12. The contact element according to claim 8, wherein the rigid region extends approximately at right angles to the contact tube longitudinal axis and the resilient region

has a quarter-circle bend between the contact tube main part and the rigid region.

13. The contact element according to claim 8, further comprising an anchoring arm for fixing the contact tube in a contact housing, the anchoring arm extending approximately at right angles away from the rigid region.

14. The contact element according to claim 13, wherein the anchoring arm extends in a direction running parallel to the contact tube longitudinal axis.

15. The contact element according to claim 13, wherein the anchoring arm has at least one anchoring projection for anchoring the anchoring arm in a contact housing.

16. The contact element according to claim 13, wherein the connecting arm is formed by a metal strip, the resilient region of which is formed by a single-layer portion of the metal strip and the rigid region of which is formed by a two-layer portion of the metal strip folded back onto itself, wherein the anchoring arm is formed by bending a free end of the folded-back part of the two-layer rigid region down at right angles to the two-layer rigid region.

17. The contact element according to 8, further comprising a fixing arm disposed on the rigid region of the connecting arm.

18. The contact element according to claim 17, further comprising an anchoring arm for fixing the contact tube in a contact housing, wherein the anchoring arm and the fixing arm are integrally connected each to one of the two double layers of the rigid region.

19. A connector arrangement having at least one single-piece electrical contact element and a contact housing, the contact element having a substantially cylindrical contact tube for resiliently receiving a substantially cylindrical contact pin, the contact tube comprising a contact tube main part, which extends over at least a substantial part of the contact tube length and over a first circumferential sub-region of the contact tube circumference, and at least one radially resilient spring arm, connected to one circumferential end of the contact tube main part and extending over a second circumferential sub-region of the contact tube circumference, wherein the spring arm projects radially outwardly in a first circumferential region adjacent to

the contact tube main part and has a cylindrical free-standing circumferential end region, the contact housing being configured to receive the contact element and having at least one substantially cylindrical location chamber, the diameter of which allows a predetermined extent of radial movement of the at least one spring arm of the contact tube, wherein the contact housing has a stop approximately in the region of each of the two axial end regions of the contact tube, such that a predetermined axial mobility of the contact tube in both axial directions is enabled but restricted to a predetermined maximum movement.

20. A connector arrangement having at least one contact element and a contact housing, the contact element having a substantially cylindrical contact tube for resiliently receiving a substantially cylindrical contact pin and an anchoring arm for fixing the contact tube in the contact housing, the contact tube comprising a contact tube main part, which extends over at least a substantial part of the contact tube length and over a first circumferential sub-region of the contact tube circumference, and at least one radially resilient spring arm, connected to one circumferential end of the contact tube main part and

extending over a second circumferential sub-region of the contact tube circumference, wherein the spring arm projects radially outwardly in a first circumferential region adjacent to the contact tube main part and has a cylindrical free-standing circumferential end region, the contact housing being configured to receive the contact element and having at least one substantially cylindrical location chamber with a diameter which allows a predetermined extent of radial movement of the at least one spring arm of the contact tube, wherein the contact housing has a stop approximately in the region of each of the two axial end regions of the contact tube, such that a predetermined axial mobility of the contact tube in both axial directions is enabled but restricted to a predetermined maximum movement, the contact housing having an anchoring-arm through-channel for receiving the anchoring arm, wherein an end region of the anchoring-arm through-channel is offset such that the contact element is fixed in axial direction of the contact tube.

21. A connector arrangement according to claim 19, wherein the contact housing is of a multi-part design and comprises a contact carrier which supports the at least

one contact element, and a chamber block having at least one location chamber.

22. Connector arrangement according to claim 21, in which the contact housing is surrounded by an extruded encapsulating part, wherein the contact carrier is injection-moulded into the extruded encapsulating part, while the chamber block is inserted into a pocket of the extruded encapsulating part.

23. A connector arrangement comprising:

at least one contact element, having a mounting region and a contact region;

a connector housing, having a contact carrier holding the mounting region and a chamber block with at least one location chamber receiving the contact region of the at least one contact element; and

an encapsulating part, which is extruded onto the contact carrier and has a pocket kept free of extrusion material, wherein the chamber block is inserted into the pocket of the finished extruded encapsulating part.

24. A method of manufacturing a connector arrangement, comprising the steps of:

a. providing a contact housing having a contact carrier and a chamber block, the contact carrier being configured to hold a contact element having a contact region and a mounting region, the chamber block having at least one location chamber for receiving the contact region of the contact element;

b. fixing the mounting region of the contact element to the contact carrier with the contact region disposed in a substantially free-standing manner;

c. placing a mold core onto the contact carrier to prevent extrusion material from entering a chamber block mounting space surrounding the contact region of the contact element;

d. extrusion coating the contact carrier and the mould core to form an extruded encapsulating part;

e. removing the mold core from the extruded encapsulating part; and

f. mounting the chamber block over the contact region of the contact element into the space of the extruded encapsulating part kept free by the mould core.

25. The method according to claim 24, wherein the chamber block is provided with at least one location chamber,

which is configured to allow both a radial and an axial mobility of the contact region.